REMARKS:

Claim Rejection - 35 USC §112 First Paragraph

Claims 1-13 have been rejected under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement because the specification fails to describe how to make or use a "redox plant" which is recited in independent claims 1 and 11. The term "redox" is a chemical term that is old and well known, as evidenced by its definition in the 2002 edition of Webster's Universal Encyclopedic Dictionary, where on page 1538 it defines "redox" as "of or relating to oxidation-reduction". Additionally, according to www.dictionary.com, WordNet ® 2.0, © 2003 Princeton University defines "redox" as "n : a reversible chemical reaction in which one reaction is an oxidation and the reverse is a reduction [syn: oxidation-reduction, oxidoreduction]". A redox reaction occurs when the waste in the slurry breaks down, as it would do while being stored. The term "redox plant" in the specification and claims has been changed to "redox tank", as this is a more accurate label for element 130 in the drawing, since this structure serves as a tank where redox reactions can take place in the stored slurry, rather than as a "plant" which implies that the structure is a factory where a redox reaction is being manufactured. Inasmuch as the term "redox" is old and well known, and there is nothing inventive in the structure involved in housing a material which undergoes a redox reaction, (i.e. one of ordinary skill in the art would know how to construct such a tank), it is believed that the invention adequately describes how to make and/or use the invention.

Claim Rejection - 35 USC §112 Second Paragraph

Claims 1-13 have been rejected under 35 U.S.C. 112, second paragraph as being indefinite. Specifically, the Examiner objects to the use of the term "redox plant" in claims 1 and 11 as being inadequately defined, and the reference in claim 6 to a obtaining a "solid" specimen of slurry, and claim 1 as not setting forth any steps involved in the method/process.

As mentioned on the previous page, "redox plant" has been changed to "redox tank", and Applicant asserts, in light of the evidence and arguments presented above, that one of ordinary skill in the art would be able to ascertain the scope of the claims.

The Examiners objection to claim 6 is well taken, and this claim has been amended to remove the term "solid".

Claim Rejection - 35 USC §101

Claim 1 has been rejected for reciting a use without setting forth any steps involved in the process. The Examiners rejection of claim 1 under 35 USC §101 is well taken, and claim 2 has been cancelled and its subject matter incorporated into claim 1 to provide a specific process step and overcome this rejection of claim 1.

Claim Rejection - 35 USC §102 or §103

Claims 1 and 11 have been rejected under 35 USC 102(b) as anticipated by or, in the alternative, under 35 USC 103(a) as obvious over Brassow et al. (4,906,135).

Claims 1 and 11 have been amended to require that a spent oil well having halophilic,

thermophilic, and methanogenic microbes therein be provided, since these microbes, which are inherent to spent oil wells, are needed to efficiently break down the stored waste and create methane, hydrogen, ammonia, and other utilizable gasses that can be harvested as a source of energy. The salt dome of Brassow et al. is not a spent oil well, and would not have the microbes required by the claim, making rejection of these amended claims as anticipated by or obvious over Brassow et al. moot. In light of the amendment to the claims, the Examiner is respectfully requested to reconsider these claims and indicate their allowability.

Claim Rejection - 35 USC §103

Claims 2 - 4 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Brassow et al. in view of Schmidt et al. (5,387,737).

Claim 2 has been cancelled. Claims 3 and 4 depend from currently amended claim 1, which, as discussed above, requires the provision of a spent oil well having halophilic, thermophilic, and methanogenic microbes, which requirement is not satisfied by the salt well of Brassow et al. Schmidt et al. has to do with disaggregating a subterranean formation having at least 20 percent porosity such that a slurry of waste can be injected into the pore spaces of the disaggregated part of the disposal zone to increase the amount of material which can be stored. This reference does not overcome the shortcomings of the Brassow, since there is no teaching of providing a spent oil well having the claimed microbes. In fact, if anything, the Schmidt reference teaches away from the claimed invention, since a spent oil well would not have a porosity of at least 20 percent, or it would not have been an effective container for the oil which had been previously extracted therefrom. In light of the claim limitations which are not met by

the prior art relied upon for the rejection, the Examiner is respectfully requested to reconsider these claims and indicate their allowability.

Claims 5-10 and 12-13 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Brassow et al. in view of Schmidt et al., and further in view of Berezoutsky (4,417,829), Butler (4,474,053), and Cummings (5,413,432).

Claims 9 and 13 has been cancelled, rendering rejection of these claim moot. Claims 5-8, 10 and 12 depend from currently amended claims 1 and 11, respectfully, which, as discussed above, require the provision of a spent oil well having halophilic, thermophilic, and methanogenic microbes, such requirement not being satisfied by the salt well of Brassow et al. As discussed above, the Schmidt reference does not overcome the shortcomings of the Brassow et al. reference, nor do Berezoutsky, Butler, or Cummings. Berezoutzky is concerned with underground storage of liquified gas, but does not discuss the use of spent oil wells or the claimed microbes. Additionally, while this reference does generally teach the concept collecting samples through a conduit, there is no disclosure of the chamber extraction conduit having "displacement means connected thereto for vertical displacement of said chamber extraction conduit thereby enabling gaseous samples to be obtained from different levels within said spent oil well" as required by claims 5 and 12. Similarly, neither Butler nor Cummings discloses the concept of using spent oil wells with halophilic, thermophilic, and methanogenic microbes in order to store and break down waste and generate gases as an energy source, as required by the independent claims from which these claims depend. Butler teaches the use of either a cavern prepared solely for storage purposes or of previously used brine production wells, which is

neither a spent oil well, nor would it include the claimed microbes to enhance the breakdown of the stored waste, and Cummings teaches using a landfill. Modifying the Brassow reference using the teachings of Brassow et al. in view of Schmidt et al., and further in view of Berezoutsky, Butler, and Cummings, would not have been obvious, as asserted by the Examiner, nor would it yield the claimed invention even if they were combined as suggested. The process of Brassow et al. involves solidifying the waste prior to inserting it into a salt dome where it is encased in a plurality of concentrically disposed casings cemented into place within the salt dome. There is no likelihood, nor intention, that the stored solid waste would include or create materials such as liquids or gases whose levels or contents might change over time such that sampling or monitoring over time or at different levels within the chamber would be desirable. Therefore the incorporation into the solid waste storing system of Brassow et al. of the liquid and gas sampling and monitoring devices of Berezoutsky and Butler would be unnecessary and unobvious. Similarly, inasmuch as no gas is created by the concentrically encased solid waste which is disposed of by Brassow, there would be no motivation to combine the Cummings's device for generating electricity from gas with the non-gas producing waste storage system of Brassow, since there would be no gas to generate electricity with.

It is noted that the limitation of "spent oil well" in cancelled claims 9 and 13 were essentially disregarded, deemed by the Examiner to be anticipated by the salt dome of Brassow. The use of a spent oil well, which inherently contains halophilic, thermophilic, and methanogenic microbes, is a critical component of the invention, as evidenced by the fact that both the spent oil well and halophilic, thermophilic, and methanogenic microbes are now recited in each independent claim. Unlike a spent oil well, a salt dome does not provide an empty

chamber which is ready to use without the need for further preparation of the chamber by removal of a material (such as salt) therefrom, nor does it inherently provide the microbes required by the claims in order to enhance the breakdown of waste stored in the chamber while simultaneously generating energy producing gases in the process, nor does it have an existing infrastructure of related wellheads, valves and piping systems which are present in a spent oil well since this infrastructure is used for the recovery of crude oil from the well. All of these things make an oil well significantly better suited, more efficient, and more economical for the disposal of waste than a salt dome. This, coupled with the fact that the provision of a spent oil well is critical to the invention and is specifically required in each of the independent claims, makes it unacceptable to consider the spent oil well of the invention as claimed to be anticipated by the salt dome of Brassow.

In view of the fact that the limitations of the claims as currently amended are not met by the prior art relied upon for the rejection, and the fact that there would be no reason, as pointed out in the above arguments, to combine the references relied upon by the Examiner in the way that is done in the rejections, it is respectfully requested that the Examiner reconsider the amended claims and indicate their allowability

CONCLUSION:

In light of the present amendments to the claims and for the foregoing reasons, it is believed that all the claims now pending in the present application are allowable, and the present application is in condition for allowance. No new matter has been added by the present amendment. Accordingly, favorable reconsideration of the application in light of the amendment and remarks is respectfully requested.

If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned representative at the number listed below.

Respectfully submitted,

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